

Notice of Allowability

Application No.

10/823,485

Examiner

Stephen W. Smoot

Applicant(s)

JEON ET AL.

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment filed on 18 January 2005.
2. ☒ The allowed claim(s) is/are 1,4,6-10 and 12.
3. ☒ The drawings filed on 12 April 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/948,425.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Stephen W. Smoot
Patent Examiner/AU 2813

DETAILED ACTION

This Office action is in response to applicant's amendment filed on 18 January 2005.

Response to Arguments

1. Applicant's arguments, see pages 6-7, filed 18 January 2005, with respect to the previously applied IBM Technical Disclosure have been fully considered and are persuasive. It is agreed that this reference lacks the feature of either "the conductive patterns are spaced apart from the contact window" or "the plurality of conductive patterns is spaced apart from the contact window", as is currently claimed by the applicant in all pending claims. Accordingly, the rejection of claims 1, 4, 6-10, based on the IBM Technical Disclosure Bulletin has been withdrawn. Also, the 102(b) rejection of claims 1, 10, 12 based on Sakaemori (JP 10-270555 A) has been withdrawn because, as pointed out by the applicant, independent claims 1, 10 have been amended to include features that are not anticipated by Sakaemori.

Allowable Subject Matter

2. Claims 1, 4, 6-10, 12 are allowed.
3. The following is an examiner's statement of reasons for allowance:
 - Claim 1, 10, 12 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device that includes a contact window passing through lower and upper dielectric layers, with conductive patterns that are spaced apart from the contact window disposed between the lower and upper dielectric layers, wherein a bottommost width of the contact window is wider than a distance separating two of the conductive patterns; and
 - Claims 4, 6-9 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device that includes a contact window passing through a dielectric layer formed on a substrate, with a plurality of conductive patterns that are spaced apart from the contact window in the dielectric layer, wherein an upper region of the contact window includes a sidewall that is substantially perpendicular to the substrate and a spacer on the sidewall, and wherein a lower region of the contact window has a wider width than the upper region.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Terauchi et al. teach a semiconductor structure that features a contact hole formed between two wirings with a lower portion of the contact hole being wider than the distance separating the two wirings.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS